

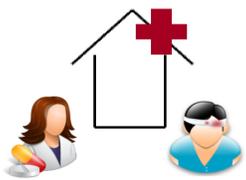
Medicines Reconciliation – Implementation by Clinical Pharmacists in the Otorhinolaryngology Clinic

N Pinder, S Amelung, J Horscht, M Lukasova, S Paasch, KF Green and T Hoppe-Tichy
University Hospital of Heidelberg, Pharmacy Department, Heidelberg, Germany

Background. Taking a complete medical history of patients before hospital admission includes an accurate assessment of the current medication history which provides the basis for appropriate pharmacotherapy during the stay in hospital and at discharge, and, as we know from literature, this is best performed by a clinical pharmacist.

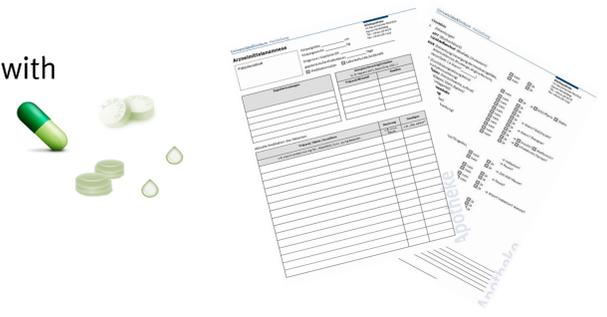
Purpose. As lots of evidence has been created by research in this field, our aim was to implement aspects of medicines reconciliation by pharmacists in clinical routine.

Materials and Methods. Throughout a 4 week pilot phase, 178 out of 221 elective otorhinolaryngology patients (81%) were seen by a pharmacist for medicines reconciliation at preadmission.



1. Medication history interview. Assessment of current medicines with the patient according to a standardized protocol.

- Brand name, administration form and strength of drugs
- Dosing scheme and temporarily discontinued treatment
- Patients' allergies, intolerances and concomitant diseases



2. Review of medication. The following questions were examined, if necessary in consultation with the attending physician:

- Is there an underlying disease for each drug?
- Are all relevant underlying diseases adequately treated?
- Is the dosage appropriate for the patient, e.g. in case of organ dysfunction?
- Are there significant drug interactions and/or contraindications?
- Are there duplicate prescriptions?
- Are there drugs to be perioperatively discontinued or changed?



3. Electronic "Medibox". Information about current medicines and switch to the hospital drug formulary.

- Useful tool for medication plans and discharge letters
- Can be modified by physicians during patients' hospital stay



If drug-related problems were found the attending physician was informed by the clinical pharmacist and possible solutions were discussed. As a follow-up, patients' medical records were reviewed and physicians', nurses' and pharmacists' feedback on the project was evaluated.

Results. Important aspects of medicines reconciliation by clinical pharmacists could be implemented in clinical routine. In the pilot phase, 133 patients were regularly taking medicines and 36 brought a medicines list. This list, however, was out-of-date or differed from patients' statements in many cases making further investigations necessary (e.g. patients' family or general practitioner).

	No. of patients (per cent)	
Total no. of (elective) patients	221	
Medicines reconciliation by clinical pharmacist	178	(81%)
Patients on regular medication	133	(60%)
Medication list	36	(27%)

Table 1. Characteristics of the patients during the project phase.



	Time
Mean time for medical history taking	10 min
Mean time for electronic "Medibox"	8 min
Average total time per patient (range)	18 min (2 - 80 min)

Table 2. Time for aspects of medicines reconciliation.

Typical drugs associated with discrepancies or medication errors were fixed combinations, statins, and anticoagulants.

- **Fixed combinations** – pharmaceutical knowledge is essential to assess all active ingredients including dosage strength
- **Statins** are critical due to their equivalent dosage and interaction profile
- In platelet aggregation inhibitors, we found that **acetylsalicylic acid**, in contrast to current guidelines, was often discontinued before an operation.
- **Anticoagulants**, such as vitamin K antagonists, also were associated with problems as perioperative bridging of oral anticoagulants is usually done with low molecular weight heparin (LMWH). Unfortunately, cases were observed with inadequately dosage of LMWH, e.g. no adjustment to renal function. Besides, perioperative management of new oral anticoagulants (NOAC) required pharmaceutical consultation.

Compared to medical history taking by a nurse, clinical pharmacists were able to collect more detailed information about patients' pharmacotherapy and to clarify several drug-related problems prior to the patients' hospital stay.

In general, collaboration with physicians was successful and the contribution of the clinical pharmacists was appreciated.

Conclusion. As known from literature, pharmacists provide the best medical history among health care professionals which is the basis for appropriate pharmacotherapy during hospital stay and discharge. Our project has shown the successful integration of a clinical pharmacist in the clinical routine of preadmission.

Pharmaceutical interventions were largely accepted by the physicians, (potential) medication errors and critical drugs could be revealed, and new SOPs will be created. We intend to continue the project.

No conflict of interest.